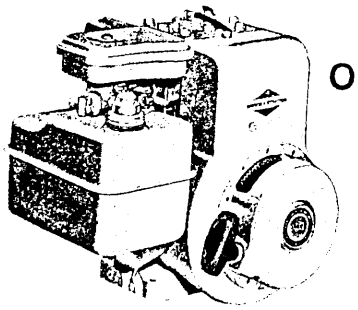
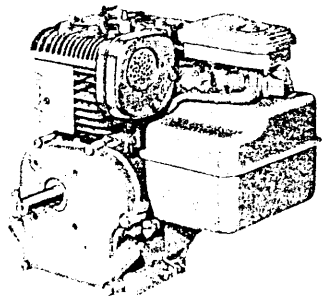


Briggs & Stratton
OPERATING AND MAINTENANCE INSTRUCTIONS
MODEL SERIES
100200 to 100299
130200 to 131299



IN THE INTEREST OF SAFETY

DO NOT RUN ENGINE AT EXCESSIVE SPEEDS. Operating an engine at excessive speeds increases the hazard of personal injury. DO NOT TAMPER WITH PARTS WHICH MAY INCREASE THE GOVERNED SPEED.

For rotary lawnmower safety, A.N.S.I. Standard Safety Specifications for Power Lawn Mowers specify a maximum blade tip speed of 19,000 feet per minute (96.5 meters per second), primarily to reduce the hazard from thrown objects.

Rotary lawnmower manufacturers select the governed top speed of the engine based on the length and design of the cutter blade and design of other mower parts.

All rotary lawnmowers should be checked for conformance to the A.N.S.I. Standard Safety Specifications for Power Lawn Mowers on blade tip speed, if the engine is repaired or replaced, or if mower parts are changed.

DANGER: GASOLINE VAPOR IS HIGHLY FLAMMABLE. Refuel outdoors preferably, or only in well ventilated areas.

DO NOT STORE, SPILL OR USE GASOLINE NEAR AN OPEN FLAME or devices such as a stove, furnace, water heater which utilize a pilot light, or devices that can create a spark.

If gasoline is accidentally spilled, move machine away from area of spill and avoid creating any source of ignition until gasoline vapors have dissipated.

DO NOT REFUEL GASOLINE TANK WHILE ENGINE IS RUNNING.

DO NOT RUN THE ENGINE IN AN ENCLOSED AREA. Exhaust gases contain carbon monoxide, an odorless and deadly poison.

TO PREVENT ACCIDENTAL STARTING always remove the spark plug from the engine, before working on the engine or equipment driven by the engine.

Except for adjustment; DO NOT operate engine if air cleaner or cover directly over carburetor air intake is removed. Removal of such part could create a fire hazard.

DO NOT OPERATE WITHOUT A MUFFLER OR TAMPER WITH THE EXHAUST SYSTEM. Damaged mufflers or spark arresters could create a fire hazard. Inspect periodically and replace if necessary.

ALWAYS KEEP HANDS AND FEET CLEAR OF ROTATING PARTS.

IN THE INTEREST OF ENVIRONMENT

A muffler which leaks because of rust or damage can permit an increased exhaust noise level. Therefore, examine the muffler periodically to be sure it is functioning effectively. To purchase a new muffler, see SERVICE AND REPAIR INFORMATION.

WARNING: If this engine is not equipped with a spark arrester and is to be used on any forest covered, brush covered, or grass covered unimproved land, before using on such land a spark arrester must be added to the muffler. The arrester must be maintained in effective working order by the operator. In the State of California the above is required by law (Section 4442 of the California Public Resources Code). Other states may have similar laws. Federal laws apply on federal lands. See your Authorized Briggs & Stratton Service Center for spark arrester muffler options.

SERVICE & REPAIR INFORMATION

If service or repair is needed, contact an Authorized Briggs & Stratton Service Center. To serve you promptly and efficiently, the Service Center will need the model, type and code number on your engine.

Each Authorized Service Center carries a stock of original Briggs & Stratton repair parts and is equipped with special service tools. Trained mechanics assure expert repair service on all Briggs & Stratton engines.

Major engine repairs should not be attempted unless you have the proper tools and a thorough knowledge of internal combustion engine repair procedure.

Your nearest service center is listed in the "Yellow Pages" under "Engines, Gasoline" or "Gasoline Engines". He is one of over 25,000 authorized dealers available to serve you.

yellow pages

This illustrated book includes "Theories of Operation", common specifications, and detailed information covering the adjustment, tune-up and repair procedures for 2 through 16 H.P. single cylinder models. It is available from any Authorized Briggs & Stratton Service Center. Order as Part Number 270962.

4 CYCLE ENGINE
BRIGGS & STRATTON
MILWAUKEE WISCONSIN U.S.A.

FORM NO. 270096-2/79
PRINTED IN U.S.A.

BRIGGS & STRATTON CORP.
Milwaukee, Wisconsin 53201

IMPORTANT SAFETY INFORMATION AND INSTRUCTIONS FOR

ENGINE SELECTION
ENGINE INSTALLATION
ENGINE OPERATION

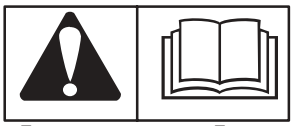
Keep these instructions for future reference.

In the USA and Canada,
our 24 hour hotline is:

18002333723

Briggs & Stratton Corporation
Milwaukee, Wisconsin 53201

www.briggsandstratton.com



Before installing and operating this engine read and observe all warnings, cautions and instructions on both sides of this sheet, on the engine, and in the operating & maintenance instructions.

NOTE: This sheet of instructions and safety information is not meant to cover all possible conditions and situations that may occur. Read entire Operating & Maintenance Instructions for this engine AND the instructions for the equipment this engine powers. Failure to follow instructions and safety information could result in serious injury or death.

The safety alert symbol (⚠) is used to identify safety information about hazards that can result in personal injury.

A signal word (DANGER, WARNING, or CAUTION) is used with the alert symbol to indicate the likelihood and the potential severity of injury. In addition, a hazard symbol may be used to represent the type of hazard.

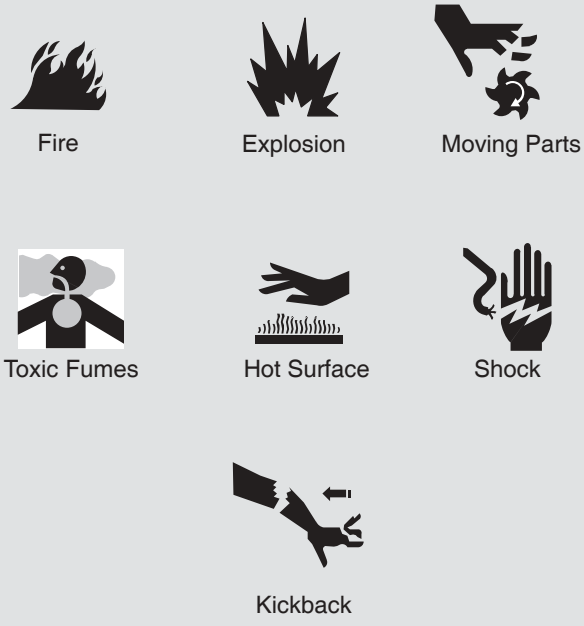
⚠ **DANGER** indicates a hazard which, if not avoided, **will result in death or serious injury.**

⚠ **WARNING** indicates a hazard which, if not avoided, **could result in death or serious injury.**

⚠ **CAUTION** indicates a hazard which, if not avoided, **might result in minor or moderate injury.**

CAUTION, when used **without** the alert symbol, indicates a situation that **could result in damage to the engine.**

HAZARD SYMBOLS AND MEANINGS



(OVER)

FORM MS-6445-01/03

ENGINE SELECTION

WARNING

Failure to select the correct engine could result in fire or explosion.

- Some engines are unique and designed for specific applications or types of equipment. If this engine will be used to build new equipment, contact Briggs & Stratton to ensure that the engine is appropriate for the intended use.

  Note: For all Go-karts use only a model 136200 series engine, which offers improved safety and performance.
- Replacement engines should be the same model as the original engine, or be the Briggs & Stratton designated replacement engine. Refer to the Operation & Maintenance Instructions for engine identification information.

  Note: For all Go-karts use only a model 136200 series engine, which offers improved safety and performance.
- Do not use Briggs & Stratton engines on 3-wheel All-Terrain Vehicles (ATVs), motor bikes, air craft products, or vehicles intended for use in competitive events. Briggs & Stratton does not approve of or authorize such uses.

ENGINE INSTALLATION

[1] Do not attempt to install this engine if you do not have the appropriate tools and knowledge of small engine installation procedures. Use only Briggs & Stratton parts. Contact your Authorized Service Dealer for assistance.

[2] Do not modify the engine in any way without Briggs & Stratton factory approval. Any such modification is at the owner's sole risk.

[3] If the exhaust system on the old engine was supplied by the equipment manufacturer, you must transfer the exhaust system and related components (original muffler and related pipes, brackets, clamps, and shields) to the new engine. All components must be in good condition.

[4] **WARNING**

Install muffler (and muffler deflector if used) so outlet points away from operator, fuel tank, and equipment, and so muffler heat will not damage or deform engine and components.

[5] **WARNING**

Ensure all fuel lines and fittings are properly assembled and do not leak. Replacement parts must be the same model as the original.

[6] **WARNING**

Ensure all wiring, including safety switches and engine shut-off components are completely installed and functioning properly.

[7] Set engine speed to equipment manufacturer's specification. Refer to equipment manufacturer's manual. Do not tamper with governor springs, or other parts that will increase engine speed above specification.

[8] **WARNING**

All engine parts, including fuel cap, spark plug, muffler, air cleaner, and covers and guards for drive components (gears, belts, shafts, couplings, etc.) must be in place before attempting to start engine.

[9] **WARNING**

If engine is installed on walk behind lawn mower, all mower components, including cutting blade, must be correctly installed before attempting to start engine.

[10] **WARNING**

When working on the engine or equipment, remove spark plug wire from spark plug. For electric start, remove negative wire from battery.

[11] **WARNING**

Do not check for spark with spark plug removed. Use Briggs & Stratton spark tester #19368.

ENGINE OPERATION

WARNING

When adding fuel:

Turn engine off and let engine cool at least 2 minutes before removing gas cap.

Fill fuel tank outdoors or in well-ventilated area. Fill tank to about 1 inch below lowest portion of neck to allow for fuel expansion.

Keep gasoline away from sparks, open flames, pilot lights, heat, and other ignition sources.

WARNING

When starting engine:

Remove all external equipment/engine loads.

Wait until spilled fuel is evaporated. Start engine outdoors.

Pull cord slowly until resistance is felt, then pull rapidly.

If engine floods, set choke to OPEN/RUN, place throttle in FAST and crank until engine starts.

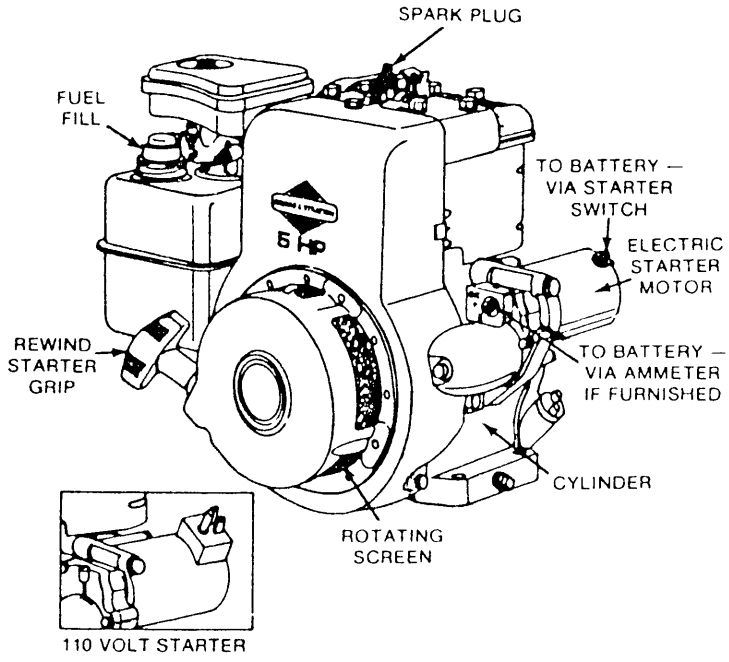
WARNING

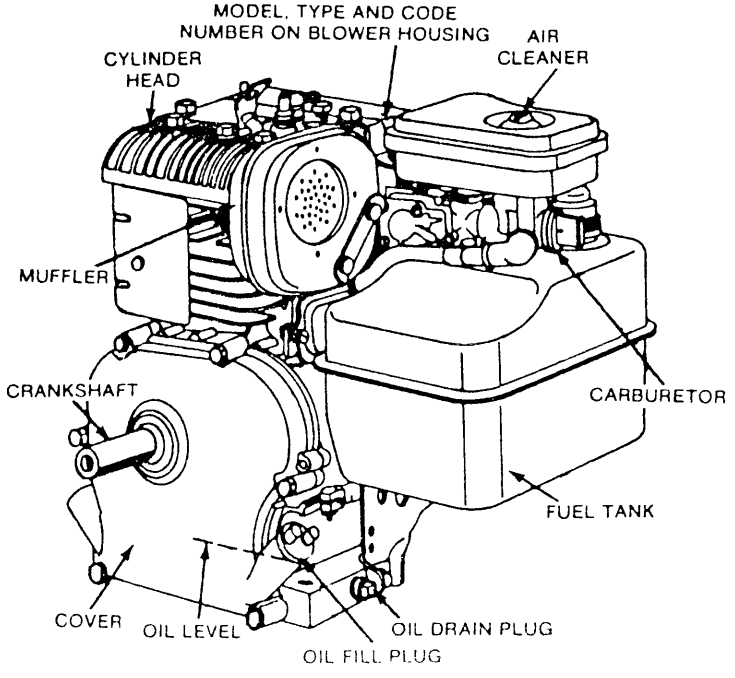
When operating equipment:

Do not tip engine or equipment at angle which causes gasoline to spill.

Run engine outdoors. Do not run in enclosed area, even if doors or windows are open.

Do not choke carburetor to stop engine.



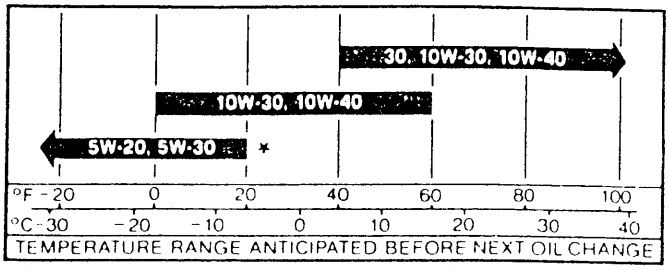


BEFORE STARTING

READ THE OPERATING INSTRUCTIONS OF THE EQUIPMENT THIS ENGINE POWERS

Use a high quality detergent oil classified "For Service SC, SD, SE or MS." Detergent oils keep the engine cleaner and retard the formation of gum and varnish deposits. Nothing should be added to the recommended oil.

RECOMMENDED SAE VISCOSITY GRADES

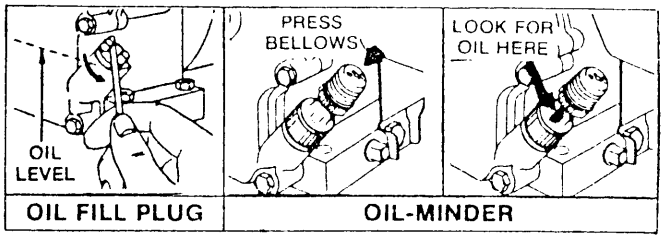


*If not available, a synthetic oil may be used having 5W-20, 5W-30 or 5W-40 viscosity.

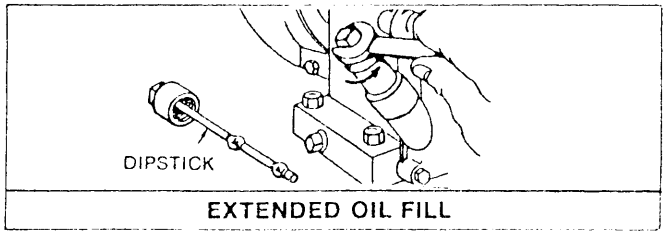
TO FILL CRANKCASE WITH OIL

Place engine level. Clean area around oil fill before removing oil fill plug or oil minder.

OIL FILL PLUG Remove oil fill plug or (optional) oil-minder. Fill crankcase to point of overflowing. POUR SLOWLY. Capacity 1¼ pints.(0.6 liters). Replace oil fill plug or oil-minder.



EXTENDED OIL FILL. (Optional) Remove cap and dipstick. FILL TO FULL MARK on dipstick, POUR SLOWLY. Capacity 1¼ pints (0.6 liters). When checking oil level, screw dipstick assembly firmly but slowly until cap bottoms on tube. DO NOT OVERFILL. Dipstick assembly must be securely assembled to tube at all times when engine is operating.



CHARGE BATTERY

Charge battery before use on engines equipped with (OPTIONAL) 12V electric starter motor. See equipment manufacturers recommendations.

FILL FUEL TANK

Use clean, fresh "regular, low-lead or lead-free" grade gasoline. DO NOT MIX OIL WITH GASOLINE.

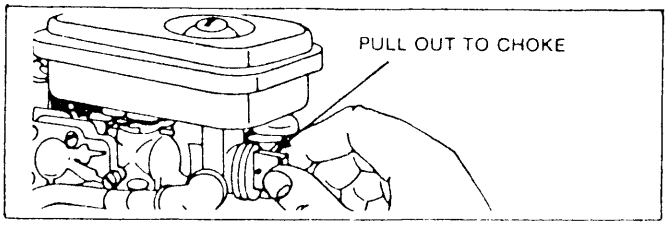
FORM NO. 270096-2/79
PRINTED IN U.S.A.

STARTING

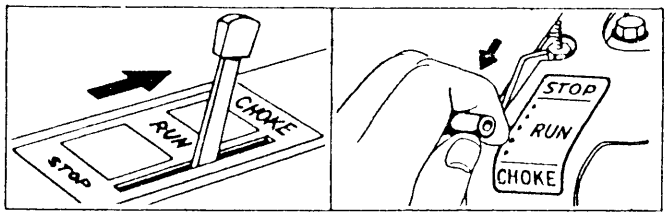
Start, store and fuel engine in a level position.

CHOKE ENGINE — Engine may be equipped with either Manual, Choke-A-Matic or Lever-Trol controls.

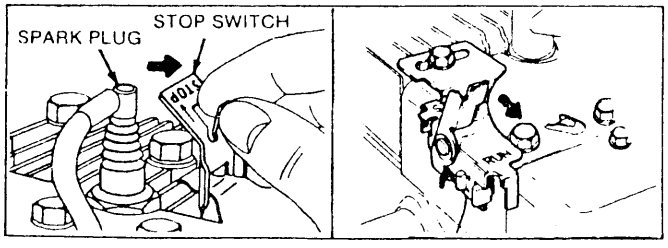
MANUAL CHOKE: Pull choke as illustrated.



CHOKE-A-MATIC and LEVER-TROLL — Move controls as far as possible toward "Choke" or Start."



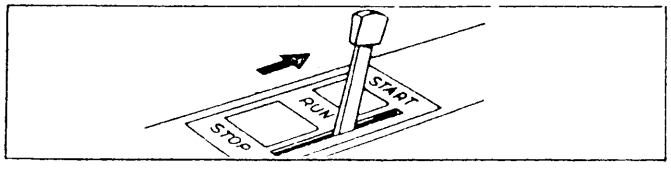
STOP SWITCH: Move STOP switch away from spark plug as illustrated, if so equipped.



NOTE: A warm engine requires less choking than a cold engine.

NOTE: Engine may not start if controls on powered equipment do not close choke fully. See ADJUSTMENT section.

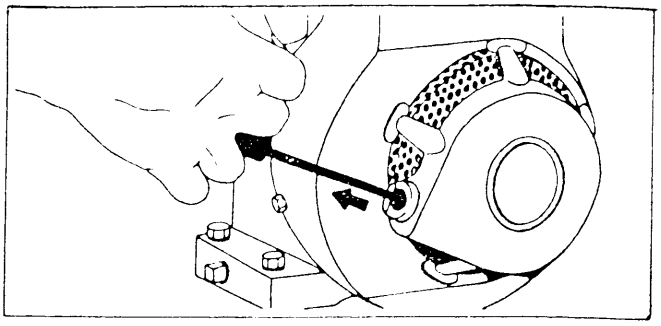
GOVERNOR SPEED CONTROL LEVER: Move governor throttle control lever to "RUN," "FAST" or "START" position if so equipped.



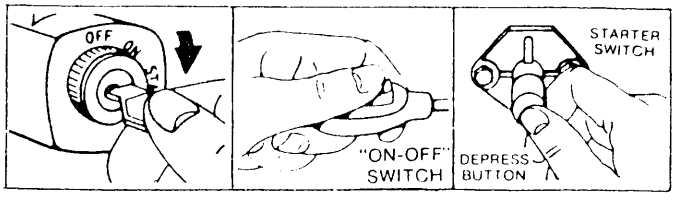
TO START ENGINE

DANGER: ALWAYS KEEP HANDS AND FEET CLEAR OF MOWER BLADE OR OTHER ROTATING MACHINERY.

Rewind Starter. (Can be used to start engine if the battery is run low or if engine cannot be started electrically. Place engine controls in "Start" and key in "On" position.) Grasp starter handle as illustrated and pull out cord rapidly to overcome compression and prevent kickback. Repeat if necessary with choke opened slightly. When engine starts, open choke gradually.



Electric Starter. On engines equipped with 12 volt starting systems, turn key to "START" position or press starter button. On engines equipped with 120 volt starting systems press "On" button of conductor cord's integral "On-Off" switch. Release as soon as engine starts and gradually open choke.



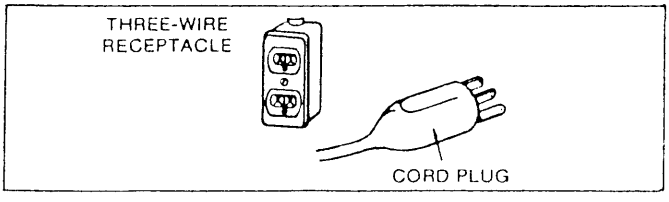
Tips to obtain best electric starter performance

a. Short starting cycles (2 to 3 seconds) provide the longest battery life.

b. Keep the battery fully charged. This assures quick and easy starts.

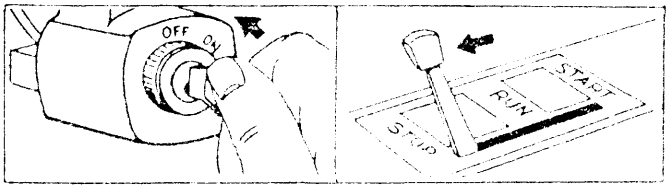
c. Disengage load from engine during start.

CAUTION: The 120 volt electric starter is equipped with a three-prong plug for your safety. The longer prong in this plug is connected to the starter motor housing. When the starter motor is plugged into the three wire cord supplied, and the cord is plugged into a properly grounded receptacle, it will protect the user from shock should the starter motor insulation fail for any reason. If a longer extension cord is used with this starter it should also have three-prong and three-hole plugs.



TO STOP ENGINE

Turn key to "OFF" position or move control lever to "STOP" position.

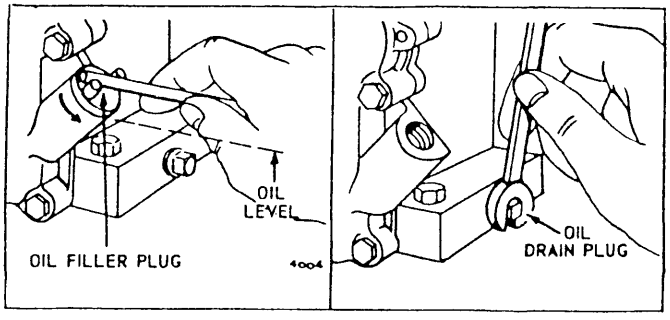


CAUTION: Always remove key from switch when leaving equipment unattended or when equipment is not in use.

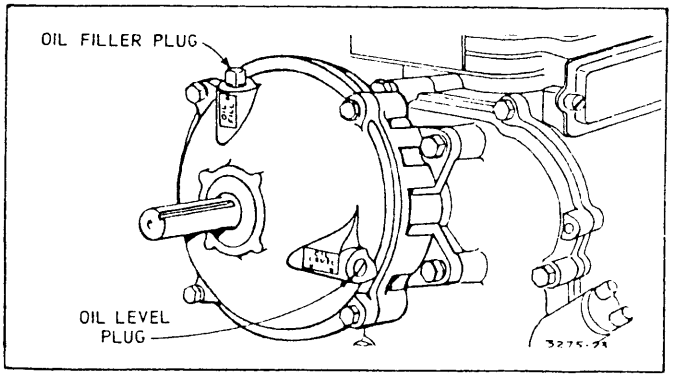
MAINTENANCE

CHECK OIL LEVEL regularly — after each five hours of operation. BE SURE OIL LEVEL IS MAINTAINED.

CHANGE OIL after first five hours of operation. Thereafter change every 25 hours of operation. Remove oil drain plug and drain oil while engine is warm. Replace drain plug. Remove oil fill plug or oil-minder and refill with new oil of proper grade. Replace oil fill plug or oil-minder.



CHANGE OIL (GEAR REDUCTION optional) Remove oil level plug and oil fill plug. Drain oil every 100 hours of operation. To refill, pour 10W-30 oil into filler hole until it runs out level check hole. Replace both plugs. Oil fill plug has a vent hole and must be installed on top of gear case cover.



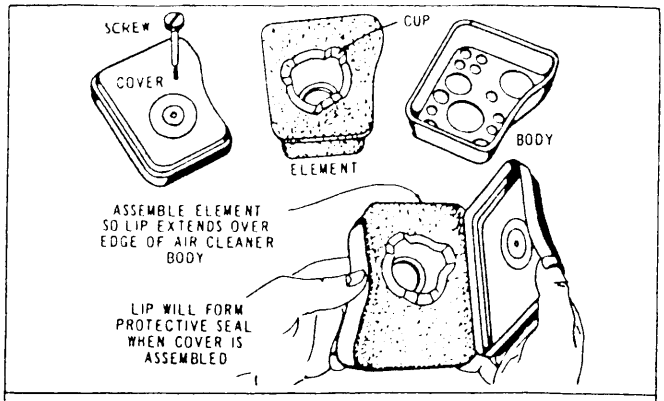
TO SERVICE AIR CLEANER

"OIL FOAM" AIR CLEANER

Clean and re-oil foam element at three month intervals or every 25 hours, whichever occurs first.

NOTE: Service air cleaner more often under dusty conditions.

1. Remove screw.
2. Remove air cleaner carefully to prevent dirt from entering carburetor.
3. Take air cleaner apart and clean.
   a. WASH foam element in a liquid detergent and water to remove dirt.
   b. Wrap foam in cloth and squeeze dry.
   c. Saturate foam with engine oil. Squeeze to remove excess oil.
4. Reassemble parts and fasten to carburetor securely with screw.



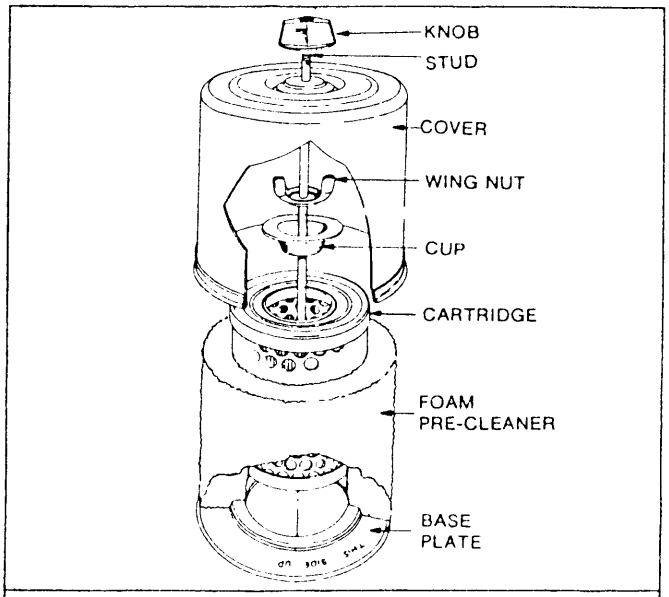
OIL FOAM AIR CLEANER

DUAL ELEMENT AIR CLEANER

Clean and re-oil foam pre-cleaner at three month intervals or every 25 hours, whichever occurs first.

NOTE: Service more often under dusty conditions.

1. Remove knob and cover.
2. Remove foam pre-cleaner by sliding it off of the paper cartridge.
3. a. Wash foam pre-cleaner in liquid detergent and water.
   b. Wrap foam pre-cleaner in cloth and squeeze dry.
   c. Saturate foam pre-cleaner in engine oil. Squeeze to remove excess oil.
4. Install foam pre-cleaner over paper cartridge. Reassemble cover and screw down tight.

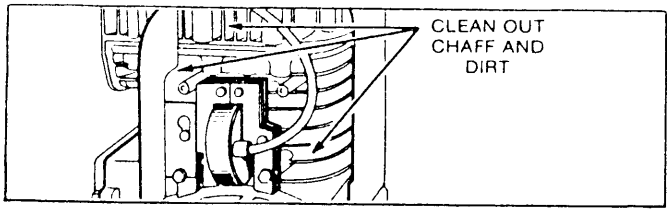


DUAL ELEMENT AIR CLEANER

Yearly or every 100 hours, whichever occurs first, remove paper cartridge. (Service more often if necessary.) Clean by tapping gently on flat surface. If very dirty, replace cartridge, or wash in a low or non-sudsing detergent and warm water solution. Rinse thoroughly with flowing water from inside out until water is clear. Cartridge must be air dried thoroughly before using.

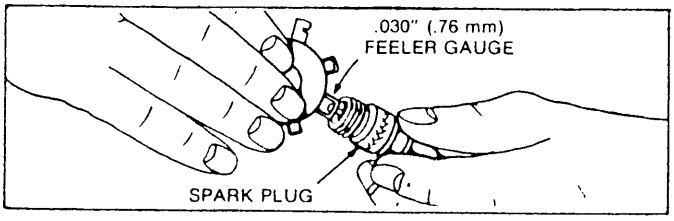
CAUTION: Petroleum solvents are not to be used to clean cartridge. They may cause deterioration of the cartridge. DO NOT OIL CARTRIDGE. DO NOT USE PRESSURIZED AIR.

CLEAN COOLING SYSTEM — Grass, chaff or dirt may clog the rotating screen and the air cooling system, especially after prolonged service cutting dry grass. Yearly or every 100 hours, whichever occurs first, remove the blower housing and clean the areas shown to avoid overspeeding, overheating and engine damage. Clean more often if necessary.



DANGER: Periodically clean muffler area to remove all grass, dirt and combustible debris.

SPARK PLUG — Clean and reset gap at .030" every 100 hours of operation.



CAUTION: Do not blast clean spark plug. Spark plug should be cleaned by scraping or wire brushing and washing with a commercial solvent.

Sparking can occur if wire terminal does not fit firmly on spark plug, or if stop switch vibrates against spark plug. Reform terminal or repair switch if necessary.

REMOVE COMBUSTION DEPOSITS every 100-300 hours of operation. Remove cylinder head and cylinder head shield. Scrape and wire brush the combustion deposits from cylinder, cylinder head, top of piston and around valves. Use a soft brush to remove deposits. Re-assemble gasket, cylinder head and cylinder head shield. Turn screws down finger tight with the three longer screws around the exhaust valve, if so equipped. Torque cylinder head screws in a staggered sequence to 140 inch pounds (15.82 Nm).

SPARK ARRESTER EQUIPPED MUFFLER — If engine muffler is equipped with spark arrester screen assembly, remove every 50 hours for cleaning and inspection. Replace if damaged.

ADJUSTMENTS

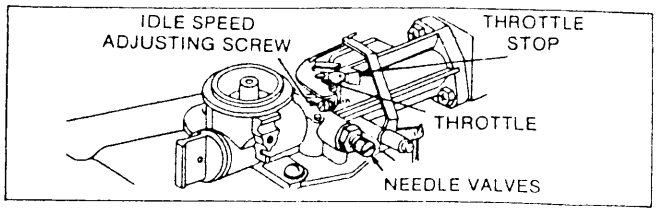
CARBURETOR ADJUSTMENTS

Minor carburetor adjustment may be required to compensate for differences in fuel, temperature, altitude or load.

TO ADJUST CARBURETOR — Turn needle valve clockwise until it just closes.

CAUTION: Valve may be damaged by turning it in too far.

Now open needle valve 1½ turns counterclockwise. This initial adjustment will permit the engine to be started and warmed up prior to final adjustment.



FINAL ADJUSTMENT

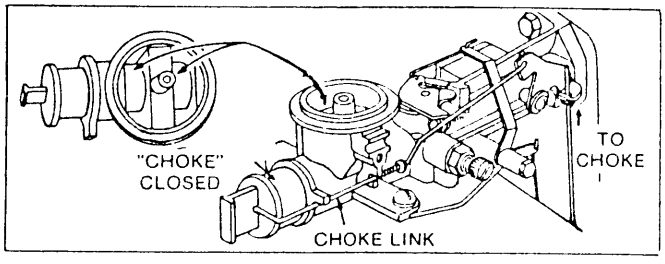
Place governor speed control lever in "FAST" position. Turn needle valve in until engine misses (clockwise — lean mixture) then turn it out past smooth operating point until engine runs unevenly (rich mixture). Now turn needle valve to the midpoint between rich and lean so the engine runs smoothly. Next, adjust idle RPM. Rotate throttle counterclockwise and hold against stop. Adjust idle speed adjusting screw to obtain 1750 RPM. Release throttle — engine should accelerate without hesitation or sputtering. If engine does not accelerate properly, the carburetor should be re-adjusted, usually to a slightly richer mixture.

CONTROL ADJUSTMENTS:

Proper choke and speed control operation is dependent upon proper adjustment of remote controls on the powered equipment.

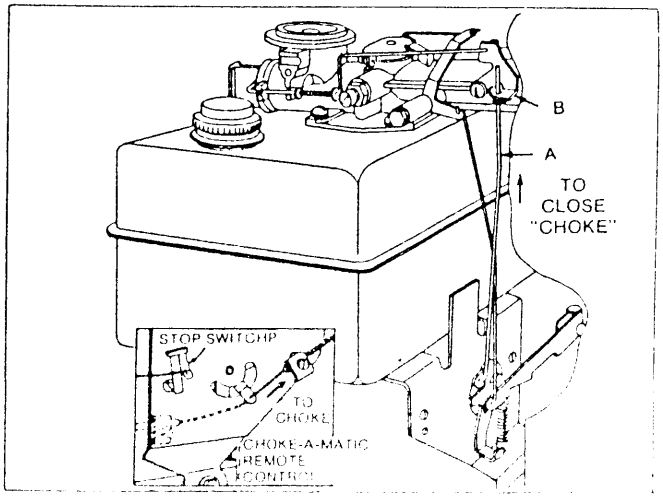
TO CHECK OPERATION OF CHOKE CONTROLS:

Remove air cleaner. Move remote control lever to "CHOKE" or "START" position. Choke should be fully closed as shown. Replace air cleaner.



To Adjust:

Place remote control lever on equipment in FAST position. Choke operating link "A" should be just touching bell crank lever at "B." See illustration.



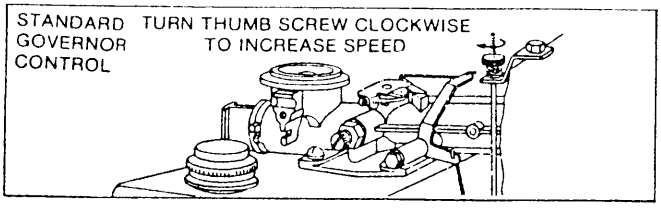
SPEED CONTROL ADJUSTMENT

The acceptable operating speed range is 1800 to 3600 RPM. Idle speed is 1750 RPM. The manufacturer of the equip-

ment on which the engine is used, specifies the top governed no load speed at which the engine may be operated. DO NOT EXCEED this speed.

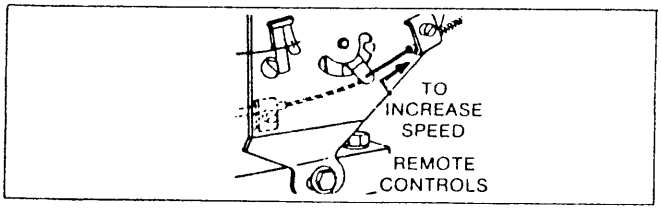
STANDARD SPEED CONTROL ADJUSTMENT

Speed adjusting thumb nut is located on top of engine. To increase speed turn thumb nut clockwise.



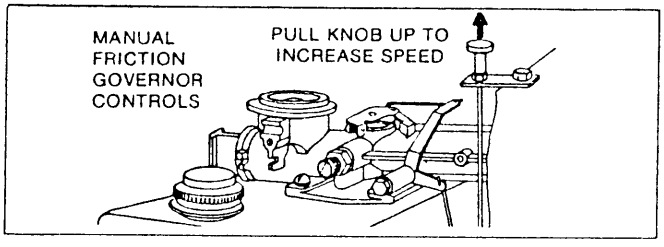
REMOTE SPEED CONTROL

Controls on powered equipment should move speed lever in direction illustrated to increase speed. Remote controls may be connected to engine at points indicated. Wire travel is shown by arrows.



MANUAL SPEED CONTROL

Move knob as shown to change engine speed.



GENERAL INFORMATION

This engine is a single-cylinder, L-head, air-cooled type.

MODEL SERIES 100200 to 100299

Bore	2-1/2" (63.5 mm)
Stroke	2-1/8" (53.98 mm)
Displacement	10.43 cu. in. (170.9 cc)
Horsepower	4.0 max. @ 3600 RPM
Torque (Ft. Lbs.)	5.93 max. @ 3050 RPM

MODEL SERIES 130200 to 131299

Bore	2-9/16" (65.09 mm)
Stroke	2-7/16" (61.91 mm)
Displacement	12.57 cu. in. (206.0 cc)
Horsepower	5.0 max. @ 3600 RPM
Torque (Ft. Lbs.)	7.66 max. @ 3000 RPM

The horsepower rating listed is established in accordance with the Society of Automotive Engineers Test Code - J607. For practical operation, the horsepower loading should not exceed 85% of this rating. Engine power will decrease 3½% for each 1,000 feet (304.8 m) above sea level and 1% for each 10° above 60° F (16° C).

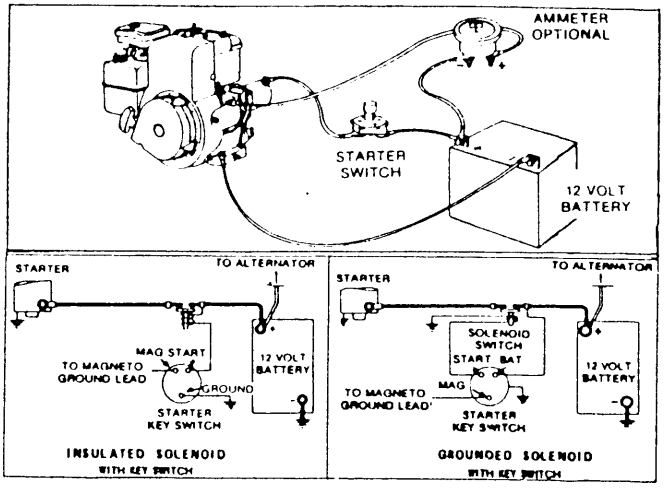
In some areas, local law requires the use of a resistor spark plug so as to suppress ignition signals. If an engine was originally equipped with a resistor spark plug, be sure to use the same type of spark plug for replacement.

TUNE-UP SPECIFICATIONS

Spark Plug Type	Champion	Autolite	Robert Bosch
Short Plug	CJ-8	235	WS9E
Long Plug	J-8	295	—
Resistor Short Plug	RCJ-8	245	WSR9E
Resistor Long Plug	RJ-8	306	—

Spark Plug Gap	.030" (.76 mm)
Ignition Point Gap	.020" (.51 mm)
Intake Valve Clearance	.005" - .007" (.13 - .18 mm)
Exhaust Valve Clearance	.009" - .011" (.23 - .28 mm)

WARNING: For electrical safety always remove cable from negative (-) side of the battery before attempting any repairs or maintenance.



STORAGE INSTRUCTIONS

Engines to be stored over 30 days should be completely drained of fuel to prevent gum deposits forming on essential carburetor parts, fuel filter and tank.

The use of a fuel additive, such as STA-BIL, or an equivalent, will minimize the formation of fuel gum deposits during storage. Such an additive may be added to the gasoline in the fuel tank of the engine, or to the gasoline in a storage container.

a. All fuel should be removed from the tank. Run the engine until it stops from lack of fuel. The small amount of fuel that remains in the sump of the tank should be removed by absorbing it with a clean, dry cloth.

b. While engine is still warm, drain oil from crankcase. Refill with fresh oil.

c. Remove spark plug, pour one ounce (29.6 cc) of engine oil into cylinder and crank slowly to distribute oil. Replace spark plug.

d. Clean dirt and chaff from cylinder, cylinder head fins, blower housing, rotating screen and muffler areas.

e. Store in a clean and dry area.